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| 09/980,182 | 01/07/2002 | Georg Gros | DNAG 227 - PFF/JRC | 1252 |

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| EXAMINER |
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TSOY, ELENA

| ART UNIT | PAPER NUMBER |
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1762

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DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/980,182 | GROS, GEORG |
| | Examiner Elena Tsoy | Art Unit 1762 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 January 2002.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 16-30 is/are pending in the application.

4a) Of the above claim(s) 16-25 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 26-30 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 16-25, drawn to a coating mixture with anticorrosive properties.

Group II, claim(s) 26-30, drawn to a method of applying a slideable anticorrosive layer to a metallic substrate using a coating mixture.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical feature for the following reasons: the special technical feature common to all the independent claims is a coating mixture comprising a polymer (a polymeric organic binder), a monomer of acrylics (a low-molecular liquid compound to be subjected to free-radical polymerization), oligomer of acrylics (a compound forming radicals under the influence of radiation) and conductive inorganic pigment, which is shown to be anticipated by Kulkarni (US 6,054,514, column 10, lines 13-17, 42-43). Therefore, the unity does not exist between the groups of claims.

During a telephone conversation with James R. Crawford on December 6, 2002 a provisional election was made with traverse to prosecute the invention of Group II, claims 26-30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

3. Claims 26, 28, 29 are objected to because of the following informalities:

Claim 26, lines 1-2, "characterized in that ... a coating mixture is applied to the surface of a metallic substrate" fails to conform to current U.S. practice: applicant is advised to change it to "comprising applying to the surface of the metallic substrate a coating mixture".

Claim 26 should incorporate language of claim 16, because claim 16 is of non-selected Group I. Incorporation of claim 16 would have the following problems: "graphitemica" in claim 16, line 5, seems to have a typographical error. For examining purposes it was interpreted as "graphite-mica".

Claim 28, lines 2-3, Claim 30, line 2, Applicants are advised to change "pretreated free of chromate" to "pretreated with a composition free of chromate" for clearer understanding.

Claim 29, lines 1-2, Applicants are advised to change "wherein that coating and curing are effected ..." to "wherein said coating and said curing are effected ..." for clearer understanding.

Claim 29, lines 1-2, "coating and curing are effected continuously one after the other in one step" is an awkward expression since coating and curing represent two steps. Appropriate correction is required.

Claim 29, line 2, Applicants are advised to change "possibly" to "optionally" for clearer understanding.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 26-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26, line 4, the terms "firm", "hard", "tough" are relative terms which render the claim indefinite. The terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification as filed discloses that the layer is "hard, firm and sufficiently tough" so that a deformation of the substrate, for instance of the steel sheet, is ensured without brittle cracks (See page 6, paragraph 1); or after 360 hours of salt spray test according to DIN 50021 it was still undamaged and showed no signs of red rust (See page 8, paragraph 1). It is not clear from the specification what ranges are intended to be encompassed by these terms.

As noted above, Claim 26 should incorporate language of claim 16, because claim 16 is of non-selected Group I. Incorporation of claim 16 would have the following problems:

(i) the term "low-molecular" recited in claim 16 is a relative term which would render the claim 26 indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. According to the specification as filed "low-molecular liquid compound" is "a low-molecular monomeric compound" (See page 3, paragraph 3). It is not clear from the specification what ranges are intended to be encompassed by these terms. Does the term include other low-molecular compounds such as liquid oligomers or it includes monomers only ? For examining purposes the "low-molecular liquid compound" was interpreted as including monomers and oligomers.

(ii) improper Markush group "a conductive inorganic pigment, from the group including oxides, phosphates and phosphides of iron and aluminum and graphitemica pigments" recited in claim 16 would render the claim 26 indefinite. The proper Markush group should be recited either in the conventional manner as "a conductive inorganic pigment selected from the group consisting of A, B --- and Y" or alternatively as "wherein said conductive inorganic pigment is A, B --- or Y".

Claim 27, line 2, "thickness of 2-8 microns, preferably 3-7 microns" renders the claim indefinite because it is not clear whether the thickness range relates to dry (cured) coating or wet coating before drying (curing). For examining purposes the phrase was interpreted as relating to dry thickness.

Claim 29, line 1, "The method as claimed in claim 25" renders the claim indefinite because non-selected claim 25 is directed to a coating mixture not to a method; and it does not recite coating and curing steps. For examining purposes the phrase was interpreted as "The method as claimed in claim 26".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. **Claims 26, 27, 29** are rejected under 35 U.S.C. 102(e) as anticipated by Kulkarni (US 6,054,514).

Kulkarni discloses a method of applying an anticorrosive layer to a metallic substrate comprising applying to the surface of the metallic substrate a coating mixture, said coating mixture comprising a polymer of acrylics (a polymeric organic binder), a monomer of acrylics and oligomer of acrylics (See column 1, lines 11-19; column 10, lines 9-16); iron oxides or aluminum tripolyphosphate (conductive inorganic pigment) (See column 8, lines 21-22; column 10, lines 43-44), and curing the applied coating by heat, radiation or simply by air drying to form the corrosion-resistant layer (See column 5, lines 13-14).

The Examiner Note: a monomer of acrylics is in fact “a low-molecular *liquid* compound to be subjected to *free-radical* polymerization” under the influence of radiation and oligomer of acrylics is “a compound forming *radicals* under the influence of radiation”, as evidenced by

Nozawa et al (US 5,126,768, column 8, lines 19-20, 25-26) and Daems et al (US 6,156,416, column 7, lines 51-61), so that the coating mixture comprising said monomer and oligomer of acrylics can be cured by radiation (actinic radiation). The specification as filed does not provide definition of "a compound forming radicals under the influence of radiation" and cites photoinitiators only as a *particular* example of such a compound (See specification, page 3, paragraph 4), thereby not excluding other compounds, e.g. oligomer of acrylics. Therefore, a coating mixture of Kulkarni comprises all claimed components.

As to claimed properties, the corrosion-resistant layer in Kulkarni has claimed properties *inherently*, i.e. it is firm, hard, tough and slidable (i.e. smooth, see specification, page 4) since the layer is produced by a method identical or substantially identical to that of claimed invention. It is held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, *claimed properties or functions are presumed to be inherent*. See MPEP 2111.02, 2112.01. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Therefore, Kulkarni meets all limitations of the claim.

As to claim 27, the coating mixture is applied to obtain a layer thickness of *at least* 0.1 mils (2.54 microns) (See column 5, lines 9-11). Thus, a layer thickness of Kulkarni is within claimed broad thickness range of 2-8 microns, as well as within a preferred range of 3-7 microns.

As to claim 29, as was discussed above; the coating may be cured by radiation right after applying to the metallic surface (See column 5, lines 13-14). Thermal post-curing is not addressed because it is *optional*.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 28, 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni (US 6,054,514) in view of Stevens et al (US 5,712,034)

As to a metal substrate being flexible steel sheet, Kulkarni, as applied above, further teaches that a metal substrate is cold rolled steel Q-panel (See column 5, lines 53-54), which is flexible steel sheet, as evidenced by Martins et al (US 4,626,283, column 15, lines 31-33).

As to pre-treatment of a metal substrate, Kulkarni further teaches that it is well known in the art to provide active corrosion inhibition of a metallic substrate using organic coatings or coatings such as zinc rich coatings and chromates, wherein the zinc rich coatings provides cathodic protection, while the chromates and phosphates passivate the metallic substrate (See column 1, lines 23-34).

Kulkarni fails to teach that both organic coatings and zinc rich coatings or chromates can be used for providing the metallic substrate with active corrosion inhibition.

Stevens et al teach that organic coatings can be applied over zinc rich coatings to protect a steel substrate against corrosion (See column 3, lines 30-32, 44-48). Also, common sense dictates

that the use of double coating, i.e. organic coatings over zinc rich coatings or chromates, phosphates, would provide "double" protection.

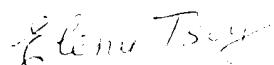
It would have been obvious to one of ordinary skill in the art at the time the invention was made to have pretreated a steel substrate of Kulkarni with zinc rich coatings or chromates before applying an organic coating, as taught by Stevens et al, with the expectation of providing the desired improved corrosion protection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (703) 605-1171. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Elena Tsoy
Examiner
Art Unit 1762

February 7, 2003